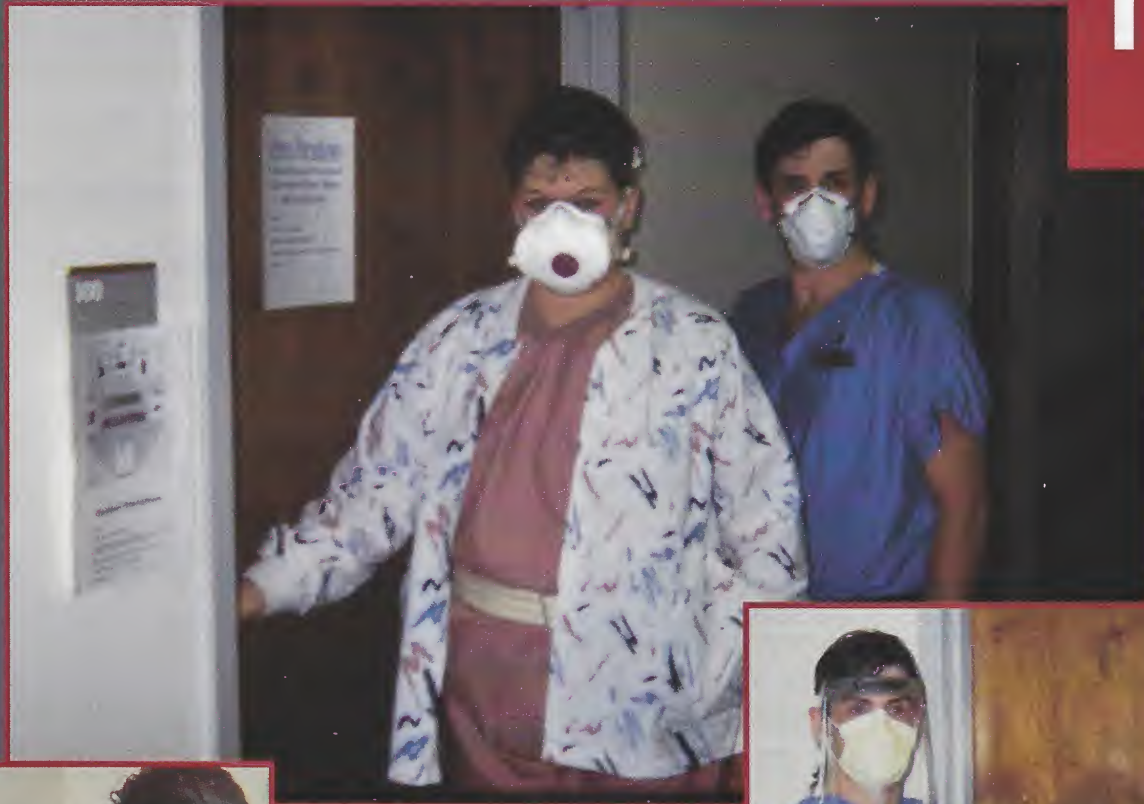


INFECTION CONTROL UPDATE

1996



BARBARA ACELLO, RN

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Delmar Publications

The following Delmar publications contain information on infection control and isolation precautions. This Infection Control Update replaces content on the pages listed for each title.

- Badasch and Chesebro. *Essentials for the Nursing Assistant in Long-Term Care*, 2nd edition, 1994. Pages 39–53. (ISBN: 0-8273-5631-5)
- Frey and Shearer Cooper. *Introduction to Nursing Assisting: Building Language Skills*, 1996. Pages 71–89. (ISBN: 0-8273-6233-1)
- Hegner and Caldwell. *Assisting in Long-Term Care*, 2nd edition, 1994. Pages 91–94, 96–107. (ISBN: 0-8273-5285-9)
- Hegner and Caldwell. *Nursing Assistant: A Nursing Process Approach*, 6th edition, 1992. Pages 155–162, 167–177. (ISBN: 0-8273-4800-2)
- Hegner and Caldwell. *Nursing Assistant: A Nursing Process Approach*, 7th edition, 1995. Pages 155–162, 168–175. (ISBN: 0-8273-6223-4, softcover; 0-8273-6286-2, hardcover)
- Kast. *Competency Exam Prep and Review Guide for Nursing Assistants*, 1990. Pages 62–64. (ISBN: 0-8273-4139-3)
- Walston and Walston. *The Nurse Aide in Long-Term Care*, 1995. Pages 36–44. (ISBN: 0-8273-5470-3)

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Introduction

In 1996, the federal government made recommendations for changing the personal protective measures used by health care workers to prevent the spread of disease. Because of these changes, recommendations were made for changes in the system of isolation categories. The information in this chapter describes how these changes evolved, how they are used, and how they affect nursing assistant practice.

MESSAGE TO THE NURSING ASSISTANT

Laura has been a certified nursing assistant for eleven years (Figure 1). She has worked in hospitals, long-term care facilities, and home health care. Laura is one of the new generation of multi-skilled nursing assistants. This means that she also is trained and qualified to work as a unit secretary, monitor technician, and restorative nursing assistant.

Laura's message to the nursing assistant: "Use standard precautions to protect yourself, your family, patients, visitors, and co-workers. Everyone benefits when the nursing assistant practices good infection control techniques. Remember that you are isolating a pathogen, not the patient. Do not make the patient feel dirty, unwanted, or untouchable

because of the precautions that you use."

Dennis has been a certified nursing assistant for sixteen years (Figure 2). He has worked in both long-term care facilities and home health care. Over the years he has done many different jobs in health care facilities, including the delivery of direct care and helping to supervise and teach a team of other nursing assistants.

Dennis' message to the nursing assistant: "Be confident in your ability to do your job. Practice infection control and standard precautions the way that you were taught by your instructor. If you do this all the time, it will become a habit. Carry these practices over to your personal life as well. If you practice medical asepsis, you have nothing to be afraid of. Infections should be respected, but not feared."

Cathy is a licensed vocational nurse (Figure 3). She has practiced nursing for more than twenty years and is a full-time nursing assistant instructor in a long-term care facility.

Cathy's message to the nursing assistant: "Practice infection control in everything that you do. This will protect you and your patients. Infection control problems are a leading cause of deficiencies on state surveys."



Figure 1 Laura



Figure 2 Dennis



Figure 3 Cathy

Objectives

After reading this chapter, you will be able to:

- Spell and define the vocabulary terms.
- Describe how infection control practices evolved from the 19th century to the present time.
- Describe standard precautions and explain when and how they are used.
- Differentiate standard precautions from universal precautions and body substance isolation.
- Describe the common methods of transmission of disease.
- Name the most important measure that health care workers use to prevent the spread of infection.
- List when handwashing is necessary.
- List three reasons for wearing gloves.
- List the times when you should change your gloves.
- Describe when to use gloves, protective eyewear, masks, and gowns.
- Describe how to handle needles, razors, and other sharp objects.
- Differentiate the HEPA mask from a surgical mask.
- Define transmission-based precautions.
- Describe airborne, droplet, and contact precautions.
- Describe how to remove equipment, linen, trash, and food trays from an isolation room.

BACKGROUND INFORMATION

The first isolation precautions were published in 1877. These precautions recommended placing patients with infections in separate facilities, called isolation hospitals. Although these patients were separated from those without infection, the patients in the infectious disease hospital were not separated from *each other*. Medical asepsis was not widely practiced. The result was that the patients infected each other with new diseases. A **nosocomial infection** is an infection that the patient contracts in a health care facility. When nurses became aware that patients were infecting each other, they began to separate patients within the hospital on separate floors or wards. Nursing textbooks began to publish information on medical asepsis at the end of the 19th century.

nosocomial infection: an infection that is acquired while a person is a patient in a health care facility

pathogens: *disease causing germs*

Centers for Disease Control and Prevention (CDC): *a government agency that studies diseases and makes recommendations to prevent the spread of infection*

Occupational Safety and Health Administration (OSHA): *an agency of the federal government that publishes and enforces rules to promote workplace safety*

universal precautions: *a set of recommendations published by the CDC in 1985 to prevent the spread of AIDS, hepatitis B, and other infections that are spread by contact with blood or body fluids*

HIV disease: *human immunodeficiency virus disease; an infection spread by contact with blood or body fluids. HIV disease may progress to AIDS.*

AIDS: *acquired immune deficiency syndrome; a progressively fatal disease that destroys the immune system and is caused by the human immunodeficiency virus (HIV)*

hepatitis B: *a serious infection of the liver that is spread by contact with blood or body fluids*

direct contact: *a method of spreading infection by touching the source of the infection*

indirect contact: *a method of spreading pathogens by touching an object or environmental surface*

personal protective equipment: *clothing, such as gowns, gloves, masks, and goggles, worn to prevent the spread of infection*

visible: *able to be seen with the eye*

Medical asepsis is also called infection control. It consists of practices and procedures that health care workers use to prevent the spread of infection. The procedures discussed in this publication are a part of medical asepsis. Medical asepsis and isolation procedures continued to advance throughout the 20th century. These practices were refined as new information was gained. As scientists learn more about the **pathogens** that cause disease, recommendations are developed to prevent the spread of infection. We are still learning new things about microbes and infections today.

The **Centers for Disease Control and Prevention**, or CDC, is a government agency that studies pathogens and diseases, and makes recommendations to prevent their spread. The CDC does not inspect or regulate health care facilities. Other government agencies, however, use CDC recommendations during their inspections. These agencies include the **Occupational Safety and Health Administration**, or OSHA, and state and federal health departments. The Joint Commission for Accreditation of Hospitals also uses CDC recommendations during its inspections.

In 1970, the CDC developed a system of seven isolation categories. A patient with a known infection was placed in a category according to the disease. Precautions were developed based on how the diseases in the category were spread. This system has been used ever since, although the categories and precautions have been modified over the years to reflect new information.

Universal Precautions

In 1985, the Centers for Disease Control and Prevention developed infection control practices called **universal precautions** in response to **HIV disease** and the **AIDS** epidemic. They were also designed to prevent the spread of **hepatitis B**, which is transmitted by the same route as the HIV virus. Hepatitis B is more of a threat than HIV to health care workers. These precautions were designed to be used *universally*. This means that *all health care workers* use them on *all patients*, regardless of the patient's disease or diagnosis. The precautions were designed to protect both the patient and the health care worker. We often think that we cannot give a patient a disease if we are not sick. However, we can pick up pathogens on our hands, clothing, and equipment, then pass the pathogens to the patient by **direct** or **indirect contact**. If proper precautions are not taken, we can pick up pathogens and become sick ourselves. We can also bring the pathogens home on our skin and clothing and infect family members and others in the community. Universal precautions offer a measure of protection for many types of infections in addition to AIDS and hepatitis B.

Universal precautions require health care workers to wear **personal protective equipment** any time that contact with blood, certain body fluids, and all body fluids containing **visible** blood is likely. If blood is not visible in some body fluids, the health care worker is not required to take protective measures. An example is urine. When using universal precautions, the health care worker is

non-intact: broken, torn, cut, cracked, chapped

secretions: discharge or drainage from the body

body substance isolation: a set of precautions that requires special handling of all body fluids

microbes: a very small life form such as a bacteria that may cause disease

drug resistant: disease causing organisms that resist treatment with normal antibiotic therapy

not required to wear gloves when touching urine unless blood is visible. However, most health care workers wear gloves when there is possible contact with any body fluid. The precautions also recommend the use of personal protective equipment for contact with **non-intact** skin. Gloves are the most commonly used personal protective equipment. Under the universal precautions system, workers are advised to wash their hands when gloves are removed.

Health care workers are taught to select personal protective equipment appropriate to the task. Water resistant aprons or gowns, face masks, face shields, and goggles also are required if splashing of **secretions** is likely.

Body Substance Isolation

Many health care workers realized that blood could be present in body fluid, even if it was not visible to the naked eye. They were concerned that they could contract diseases from blood they could not see. Because of this problem, a new isolation system called **body substance isolation** was developed at a hospital. The guidelines were published in a medical journal, and many health care facilities adopted the precautions. In this system, personal protective equipment is worn for contact with all body fluids, regardless of whether blood is visible. Many health care workers used a combination of both universal precautions and body substance isolation. Under the body substance isolation system, the health care worker does not have to perform the handwashing procedure when gloves are removed unless the gloves are visibly soiled or torn. This is a concern because **microbes** can get through the pores of some gloves. Occasionally microbes get inside the gloves when the worker applies or removes them. Universal precautions and body substance isolation do not include recommendations to protect the health care worker from diseases spread by microbes in the air. Additionally, new pathogens that resist antibiotic treatment have been identified. These pathogens pose a threat to patients and health care workers in hospitals and nursing facilities.

Drug Resistant Organisms

Another problem that the CDC addressed was that new pathogens were discovered that resisted treatment by commonly used antibiotics. These microbes are **drug resistant**. The pathogens became drug resistant because, over the years, people taking antibiotics stopped taking them when they felt better but before the prescription was finished. The pathogens still in the body when the drug was stopped became resistant to the antibiotic. Another problem is that antibiotics have been overprescribed. People took antibiotics when they did not need them, and the pathogens developed resistance. Drugs are available to treat some drug resistant pathogens, but the drugs are very expensive and often have severe side effects. This is of particular concern to the elderly, who may not be able to tolerate the drugs. Drug resistant microbes are a threat to patients and health care workers in health care facilities.

INTRODUCTION TO STANDARD PRECAUTIONS

standard precautions: a set of recommendations published by the CDC in 1996 to protect health care workers and others from infection

The CDC recognized that although universal precautions and body substance isolation offer some measure of protection, both systems of precautions have some problems. After several years of researching, developing, and improving recommendations to protect health care workers, patients, and visitors from a wide range of diseases, recommendations were published in early 1996. These are called **standard precautions** (Figure 4). Standard precautions include information from both universal precautions and body substance isolation as well as new information. The new precautions also changed some medical terminology to avoid confusion with existing systems. The new precautions eliminate the need for several isolation categories previously used and offer additional protection for drug resistant pathogens and other diseases spread in the air. As with universal precautions and body substance isolation, standard precautions are used by all health care workers for


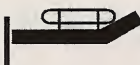







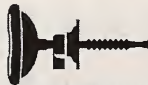
| STANDARD PRECAUTIONS FOR INFECTION CONTROL | STANDARD PRECAUTIONS FOR INFECTION CONTROL (Continued) |
|--|---|
|  <p>Wash Hands (Plain soap) Wash after touching blood, body fluids, secretions, excretions, and contaminated items. Wash immediately after gloves are removed and between patient contacts. Avoid transfer of microorganisms to other patients or environments.</p> |  <p>Environmental Control Follow hospital procedures for routine care, cleaning, and disinfection of environmental surfaces, beds, bed-rails, bedside equipment and other frequently touched surfaces.</p> |
|  <p>Wear Gloves Wear when touching blood, body fluids, secretions, excretions, and contaminated items. Put on clean gloves just before touching mucous membranes and nonintact skin. Change gloves between tasks and procedures on the same patient after contact with material that may contain high concentrations of microorganisms. Remove gloves promptly after use, before touching noncontaminated items and environmental surfaces, and before going to another patient, and wash hands immediately to avoid transfer of microorganisms to other patients or environments.</p> |  <p>Linen Handle, transport, and process used linen soiled with blood, body fluids, secretions, or excretions in a manner that prevents exposure and contamination of clothing, and avoids transfer of microorganisms to other patients and environments.</p> |
|  <p>Wear Mask and Eye Protection or Face Shield Protect mucous membranes of the eyes, nose and mouth during procedures and patient-care activities that are likely to generate splashes or sprays of blood, body fluids, secretions, or excretions.</p> |  <p>Occupational Health and Bloodborne Pathogens Prevent injuries when using needles, scalpels, and other sharp instruments or devices; when handling sharp instruments after procedures; when cleaning used instruments; and when disposing of used needles.</p> |
|  <p>Wear Gown Protect skin and prevent soiling of clothing during procedures that are likely to generate splashes or sprays of blood, body fluids, secretions, or excretions. Remove a soiled gown as promptly as possible and wash hands to avoid transfer of microorganisms to other patients or environments.</p> |  <p>Never recap used needles using both hands or any other technique that involves directing the point of a needle towards any part of the body; rather, use either a one-handed "scoop" technique or a mechanical device designed for holding the needle sheath.</p> <p>Do not remove used needles from disposable syringes by hand, and do not bend, break, or otherwise manipulate used needles by hand. Place used disposable syringes and needles, scalpels, blades, and other sharp items in puncture-resistant sharps containers located as close as practical to the area in which the items were used, and place reusable syringes and needles in a puncture-resistant container for transport to the reprocessing area.</p> |
|  <p>Patient-Care Equipment Handle used patient-care equipment soiled with blood, body fluids, secretions, or excretions in a manner that prevents skin and mucous membrane exposures, contamination of clothing, and transfer of microorganisms to other patients and environments. Ensure that reusable equipment is not used for the care of another patient until it has been appropriately cleaned and reprocessed and single use items are properly discarded.</p> |  <p>Use resuscitation devices as an alternative to mouth-to-mouth resuscitation.</p> <p>Patient Placement Use a private room for a patient who contaminates the environment or who does not (or cannot be expected to) assist in maintaining appropriate hygiene or environmental control. Consult Infection Control if a private room is not available.</p> |

Figure 4 Standard precautions. (Courtesy of BREVIS Corporation, Salt Lake City, UT)

all patients. They do not work effectively if they are not used consistently. Remember that we cannot always tell whether patients can spread a disease or infection by looking at them.

Primary Methods of Disease Transmission

In order for a disease to spread, six elements must be present. If any element is missing, the disease will not spread. The six elements together are known as the **chain of infection** (Figure 5). The chain is made up of a:

1. source of infection, or reservoir
2. causative agent
3. susceptible host
4. method of transmission
5. portal of exit
6. portal of entry

The **causative agent** is the pathogen that causes an infection. The **source of infection** or **reservoir**, is usually a human who has the disease or pathogen. The person may or may not know that the germ is present. The **susceptible host** is a person who is exposed to the pathogen and is not immune to it. **Immunity** is the natural ability of the body to resist disease. Several factors affect a person's immunity to disease, including age, underlying illness, medications, breaks in the skin, and history of immunization against the disease. The method of **transmission** is the way the pathogen is spread. The CDC states that the most common methods of spread are by direct and indirect contact, and by breathing microbes in the air. The **portal of exit** is a secretion from the infected person's body. The disease causing pathogen is in the secretion. The **portal of entry** is the location where the infectious pathogen enters another person's body.

The goal of standard precautions is to interrupt the chain of infection by preventing the spread of disease causing microbes.

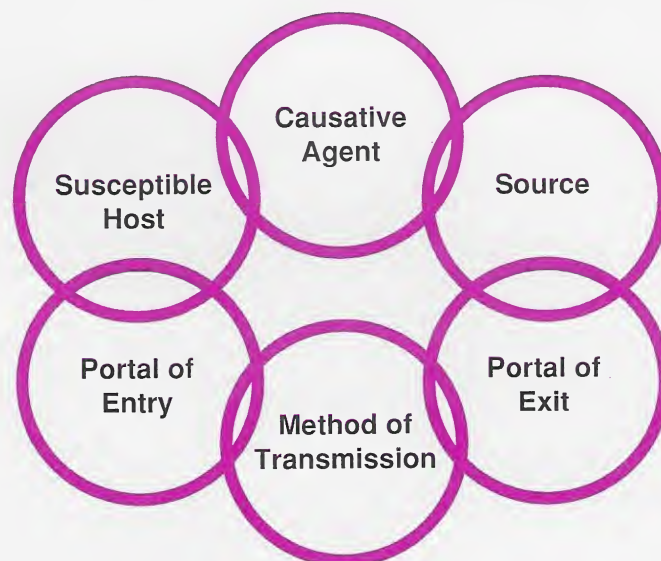


Figure 5 Chain of infection

chain of infection: the elements necessary for an infection to develop

causative agent: a pathogen that causes an infection

source of infection: the person who has an infection that can be spread to others

reservoir: a human being who has an infection that can be spread to others; the person may not know of the infection

susceptible host: a person who can contract an infection

immunity: the natural ability of the body to resist infection

transmission: spread of infection from one person to another

portal of exit: body secretions from the person who has an infection; the secretions contain harmful pathogens that can cause the infection to spread to others

portal of entry: a place for a pathogen to enter the human body

airborne transmission: the spread in the air of very tiny disease causing microbes over long distances

surgical mask: the standard mask worn by health care workers in surgery, during sterile procedures, and in some isolation cases

droplet transmission: a method of spreading disease via respiratory secretions in the air; droplet spread is usually confined to within three feet of the source

The Spread of Pathogens in the Air. Pathogens can be spread in the air in two different ways. In the **airborne** method of transmission, pathogens are very tiny and lightweight. They can travel long distances on dust particles and moisture in the air. Since these pathogens are very small, they can fit between the pores of a regular **surgical mask**. Pathogens spread by **droplet transmission** are large and heavy (Figure 6). These microbes are found in respiratory secretions. They are spread on mucus that leaves the body when the source patient laughs, coughs, sneezes, sings, or talks. Because droplets are large and heavy, they fall from the air quickly and do not usually spread more than three feet away from the source. A surgical mask protects the health care worker from diseases spread by droplets. Understanding the difference between droplet and airborne transmission is important.

The Spread of Pathogens by Contact. Pathogens that are spread by direct contact are contracted by touching the source of the infection directly (Figure 7). The germ then enters the body through non-intact skin or when a person touches her or his mucous membranes. The pathogen also can enter the body through cuts or cracks on a person's hands. Pathogens spread by indirect contact are spread by touching an item or object that has pathogens on it (Figure 8). For example, pretend that you remove a patient's bedpan without wearing gloves. If a pathogen is on the bedpan, it is transferred to your hands and can then be introduced to the inside of your body.

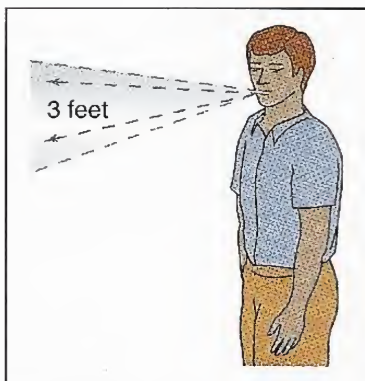


Figure 6 Droplet method of transmission. The microbes are heavy and usually do not travel more than three feet before falling to the floor.



Figure 7 Direct contact method of transmission

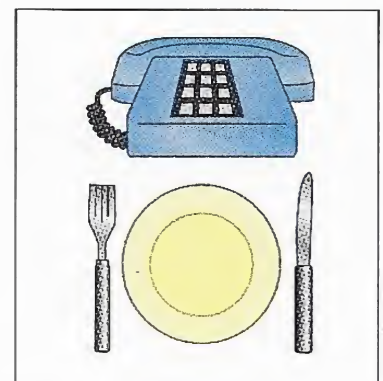


Figure 8 Sources of indirect contact transmission

common vehicle: a method of spreading disease through food, water, medication, equipment, and other items in a health care facility

vectors: insects or rodents that can carry disease

Other Methods of Disease Transmission. The CDC also recognizes that pathogens may also be spread by **common vehicle** transmission, which involves microorganisms in items such as food, water, medications, medical devices, and equipment (Figure 9). **Vectors** also may spread pathogens (Figure 10). Vectors are small insects or animals. Spread of diseases by these two methods is less common than by the other methods.



Figure 9 Food is a potential source of common vehicle transmission.

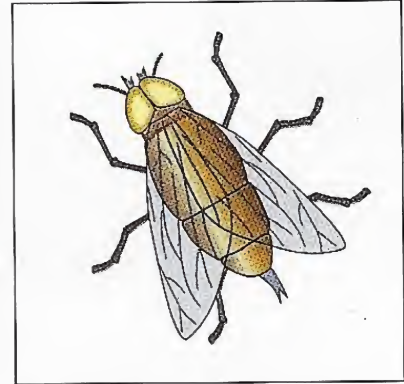


Figure 10 Insects can carry pathogens from one place to another.

METHODS OF PREVENTING THE SPREAD OF INFECTION

Handwashing is the single most important measure to use to prevent the spread of infection (Figure 11). Handwashing should be done frequently throughout the shift. Hands must be washed before and after each patient contact, and at other times when the nursing assistant has contacted secretions, **excretions**, or **contaminated** items. Wash your hands if you contact these things, even if you wore gloves during the contact. Handwashing should be done for a minimum of ten seconds. The longer the handwashing procedure lasts, the more microbes are removed from the hands. The **friction** created when washing your hands is the most important part of the procedure for removing germs.

excretions: waste products eliminated from the body

contaminated: unclean, dirty, potentially able to transfer disease causing microbes

friction: rubbing two surfaces together vigorously



Figure 11 Frequent handwashing is the most important way to prevent the spread of infection.

barrier: a piece of clothing or equipment that prevents pathogens from contacting your body

Personal Protective Equipment

Personal protective equipment provides a **barrier** between the patient and the health care worker. When used correctly, personal protective equipment provides a barrier that prevents the transfer of pathogens from one person to the other. Wearing personal protective equipment is a very important part of standard precautions. Health care facilities are required to provide personal protective equipment in various sizes. The equipment must be available in areas where it will be needed, if these areas can be anticipated in advance. You must become familiar with the types of equipment available, where it is stored, and how to use it correctly.

Standard precautions are used during routine patient care and cleaning duties. They must be used anytime when you expect to have contact with:

1. blood
2. any moist body fluid except sweat, secretions, or excretions
3. mucous membranes
4. non-intact skin

If you are unsure if you will be contacting any of these, the best rule is to wear protective equipment. If you are unsure whether an item or surface is contaminated, assume that it is and wear the correct type of personal protective equipment. Using universal precautions, you were required to apply barrier equipment only if blood was visible. Standard precautions, however, require the use of personal protective equipment regardless of whether blood is visible. Table 1 shows examples of barrier precautions used for common nursing assistant tasks.

TABLE 1 Examples of Personal Protective Equipment Used in Common Nursing Assistant Tasks

Note: There are exceptions to every rule. Use this chart as a guide only. Add personal protective equipment in special situations, such as splashing. Follow your facility policies for use of protective equipment in routine tasks.

| Nursing Assistant Task | Gloves | Gown | Goggles/ Face Shield | Surgical Mask |
|--|--------|------|-------------------------------|-------------------------------|
| Controlling bleeding (squirting blood) | Yes | Yes | Yes | Yes |
| Wiping a wheelchair or shower chair with disinfectant solution | Yes | No | No | No |
| Emptying a catheter bag | Yes | No | Yes, if facility policy | Yes, if facility policy |
| Serving a meal tray | No | No | No | No |

TABLE 1 continued

| Nursing Assistant Task | Gloves | Gown | Goggles/ Face Shield | Surgical Mask |
|---|--|--|--|--|
| Giving a back rub to a patient who has intact skin | No | No | No | No |
| Giving oral care | Yes | No | No | No |
| Helping the dentist with a procedure | Yes | Yes, if facility policy | Yes | Yes |
| Cleaning a patient and changing the bed after an episode of diarrhea | Yes | Yes, if facility policy | No | No |
| Taking an oral temperature with a glass thermometer (gloves are not necessary with an electronic thermometer) | Yes | No | No | No |
| Taking a rectal temperature | Yes | No | No | No |
| Taking a blood pressure | No | No | No | No |
| Cleaning soiled patient care utensils, such as bedpans | Yes | Yes, if splashing is likely | Yes, if splashing is likely | Yes, if splashing is likely |
| Shaving a patient with a disposable razor | Yes, because of the high risk of this procedure for contact with blood | No | No | No |
| Giving eye care | Yes | No | No | No |
| Giving special mouth care to an unconscious patient | Yes | No, unless coughing is likely | No, unless coughing is likely | No, unless coughing is likely |
| Washing the patient's genital area | Yes | No | No | No |
| Washing the patient's arms and legs when the skin is not broken | No | No | No | No |

Using Gloves. Using disposable gloves is another important method of preventing the spread of microbes (Figure 12). To be effective, gloves must not have tears in them, and they must fit properly. There are different types of gloves for different tasks. Your instructor and facility supervisor will explain when and how to use



Figure 12 Gloves that fit properly provide an excellent barrier for your hands.

each type of glove. If gloves become soiled, remove them and then wash your hands. Apply new gloves if necessary.

Gloves are worn for three important reasons:

1. Gloves provide a protective barrier between the nursing assistant and the patient. This protects the patient from picking up a pathogen from the nursing assistant's hands.
2. The nursing assistant's hands also are protected from picking up a pathogen from the patient. Gloves are changed after each patient. Never wear gloves to care for more than one patient. This prevents the nursing assistant from spreading a pathogen from one patient to another.
3. Sometimes more than one change of gloves is necessary in the care of one patient. This is to prevent the spread of a pathogen to other areas of the patient's body.

Always put on clean gloves immediately before touching mucous membranes or non-intact skin. Also be careful not to touch surfaces in the room with gloves that are contaminated. As you can see, handwashing and changing gloves may be necessary several times in the care of each patient.

Wearing gloves does not replace the need for handwashing. Always wash your hands before putting on gloves and after removing them. If your gloves become visibly soiled during a procedure, the gloves should be removed and discarded. Wash your hands and apply a new pair of gloves before continuing patient care. Gloves also should be removed and hands washed after caring for an area on the patient's body that is considered unclean. For example, gloves should be removed and hands washed after cleaning urine or a bowel movement to prevent the spread of germs from gloves to other areas of the patient's body or to environmental surfaces. Figure 13 provides guidelines for times when gloves should be changed. *Remember, anything that you touch with a contaminated glove will transfer the microbes on the glove to the object you touch.* If carrying a contaminated item from one location to another is necessary, remove one glove. Carry the contaminated object in the gloved hand (Figure 14). Use the other hand to open doors, turn on faucets, or do other tasks. This prevents contamination of environmental surfaces. If you accidentally touch a contaminated surface after removing your gloves, wash your hands.

Know and follow your facility's policy for disposing of used gloves. Some facilities require disposal of gloves in a covered or sealed waste container, such as a covered trash can or closed plastic bag. Other facilities have special areas for glove disposal.

Wearing gloves for all patient care is unnecessary. In fact, the use of gloves for all patient contact is not recommended. Wearing gloves for all care sends a negative psychological message to the patient. It implies that the patient is not clean. All humans need physical contact with other people, and touching someone with your ungloved hand is an important way of doing this. Always explain to the patient the reason for using gloves, and use them only when necessary to prevent the spread of infection.



Figure 14 Dennis is wearing a glove on one hand to carry this bag to the biohazardous waste disposal area. The glove has been removed from the other hand so that he can open doors.

CHANGING GLOVES

Always wash your hands before applying and after removing gloves. Never touch equipment or surfaces in the environment with a contaminated glove.

Change your gloves:

- Before each patient contact
- After each patient contact
- Immediately before touching mucous membranes
- Immediately before touching non-intact skin
- After you touch a patient's secretions or excretions, before moving to care for another part of the body
- After touching blood or body fluids, before moving to care for another part of the body
- After touching contaminated environmental surfaces or equipment
- Any time that your gloves become visibly soiled
- If your gloves become torn

Figure 13 Steps for changing gloves

When to Wear Gloves. Gloves should be worn:

1. for cleaning most supplies and equipment. Follow facility policies and procedures.
2. if your hands have cuts, cracks, or open sores on them.
3. any time you may have contact with blood or any moist body fluid (except sweat), secretions, or excretions.
4. any time contact with the mucous membranes of the patient's eyes, nose, mouth, or genital area is possible.
5. whenever caring for a patient's non-intact skin.
6. whenever you have contact with an environmental surface or object that is potentially contaminated by a patient's blood, body fluid, secretions, or excretions.

Protecting the Mucous Membranes in Your Eyes, Nose, and Mouth. The mucous membranes in your eyes, nose, and mouth can provide a portal of entry for pathogens. Mucous membranes are openings into your body. When they must be protected, select the correct type of personal protective equipment barriers for the task to be performed.

Use barriers to protect your eyes, nose, and mouth whenever you expect splashing or spraying of blood or body fluids. This could occur when assisting a nurse, doctor, or dentist with a procedure. It could also occur in some routine patient care and cleaning tasks that the nursing assistant performs. Become familiar with the types of face protection in your facility.



Figure 15 Goggles that fit securely against the face prevent splashing into the mucous membranes of the eyes.



Figure 16 Goggles should always be worn with a mask.

goggles: personal protective equipment worn to protect the eyes

face shield: personal protective equipment that protects the face from the forehead to the chin

Goggles are used to protect the mucous membranes of your eyes (Figure 15). Goggles surround the eye area and are held in place with an elastic strap around the back of the head. A surgical mask should also be worn when goggles are used to protect the nose and mouth (Figure 16). Some masks have a plastic eye shield attached to them. This one-piece unit is worn instead of separate face mask and goggles (Figure 17).

A **face shield** may be used instead of goggles (Figure 18). The face shield is a piece of plastic that extends from the forehead to the chin and covers the eye, nose, and mouth area. People who wear glasses may prefer to use the face shield instead of goggles. Although the face shield covers the entire face, wearing a surgical mask under the shield is necessary. The shield does not seal tightly against the skin, so secretions containing microbes can still splash around and under it. A good rule to follow is that you can wear a



Figure 17 This type of mask has a protective eye shield attached. It is used instead of goggles.



Figure 18 The face shield does not fit the face as tightly as goggles. A mask is worn to protect the nose and mouth.

mask without protective eyewear, but you can never wear protective eyewear without a mask.

Gowns, Plastic Aprons, and Other Protective Apparel. Gowns, plastic aprons, and other pieces of protective clothing may be worn to protect your skin and clothing from contact with potentially infectious pathogens and body fluids (Figure 19). Although gowns are used primarily in caring for patients in certain types of isolation, they should also be worn if spraying or splashing of blood, body fluids, secretions, or excretions is likely. Gowns may be made of paper, plastic, or fabric. They must be treated to make them **fluid resistant**. Gowns are worn only in the area where they are used, then removed. Health care facilities have policies and procedures for storing and discarding used gowns. Wash your hands after removing the gown.

fluid resistant: specially treated fabric that fluid cannot penetrate

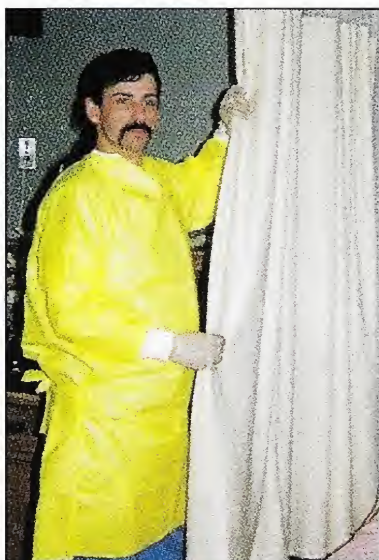


Figure 19 Gowns may be paper, plastic, or fabric, and are treated so fluids cannot soak through them.

Handling Needles and Sharps

Needles, razors, broken glass, and other sharp objects require special handling and disposal. Handle these items very carefully so that you do not cut yourself. Discard them in special puncture resistant containers (Figure 20). If you must clean up broken glass, sweep it with a broom, or pick it up with a wet paper towel in your gloved hand. If you have contact with syringes or needles, never recap them. Once the cap is removed, it is not put back on. The needle should be disposed of in the sharps container immediately. Place it in the container with the needle facing down. The sharps container should not be filled more than three-quarters full. When the container is three-quarters full, place the cap on the container. The cap should lock down so that once it is applied it cannot be



Figure 20 Place uncapped needles and razors in the sharps container.

reopened. Needlesticks are a common source of injury and infection in health care workers, and you must use extreme care when handling needles and all other sharp items.

Cleaning Tasks Involving Blood and Body Fluids

When cleaning spills of blood or body fluids, always use a facility approved disinfectant. These are special chemical solutions approved by the Environmental Protection Agency. If a small spill of no more than a few drops of blood or body fluid is on an environmental surface, it can be wiped clean with an approved disinfectant and a paper towel with your gloved hand. For larger spills, an absorbent powder should be used to absorb the spill. The absorbent powder is usually clay or chlorine based. It absorbs a large amount of liquid very quickly. The spill is then swept up and disposed of in a biohazardous waste bag (Figure 21). After the absorbent powder is removed, wipe the environmental surface with a disinfectant solution.

If you are instructed to clean containers, such as suction canisters that contain blood or body fluids, carefully pour them into a drain connected to a sanitary sewer. Wear personal protective equipment. After the secretions have been disposed of, clean or discard the container according to facility policy.



Figure 21 An absorbent powder has turned the body fluid spill into a solid material that can be swept up with a broom. The floor is disinfected after the spill is removed.



Figure 22 The biohazard symbol identifies items contaminated with blood or body fluid.

Biohazardous Waste

Any disposable item contaminated with blood or body fluid is considered biohazardous waste. This waste is identified by the biohazard emblem, which has an orange or red background with a contrasting color symbol (Figure 22). Biohazardous waste requires special handling. Facilities have policies and procedures for disposing and removing biohazardous waste. Your instructor or supervisor will advise you regarding facility policies for transporting, labeling, and discarding biohazardous material.

Laboratory Specimens

The nursing assistant is often responsible for collecting and transporting laboratory specimens. Because these are samples of blood and body fluids, they are biohazardous. They should be stored in sealed containers. Most facilities place these containers inside a second, sealed bag called a transport bag. The bag is labeled with the biohazard emblem. If storing a specimen in a refrigerator is necessary, it should not be placed in the same refrigerator with food or beverages. A separate refrigerator or cooler is used for laboratory specimens. Follow facility policy for collection, packaging, labeling, and transporting specimens.

PATIENT PLACEMENT FOR PATIENTS IN ISOLATION

In most health care facilities, two or more patients share a room. If a patient has a disease known to be infectious, a private room is used. However, two or more patients with the same disease can share a room. Moving patients to a specific room to contain a pathogen is called **isolation**. Everyone who enters the room must wear personal protective equipment and take specific precautions based on how the infection is spread. A sign on the door of the room alerts anyone who enters the room that special precautions are necessary (Figure 23).

isolation: separating a patient who has an infection from other patients

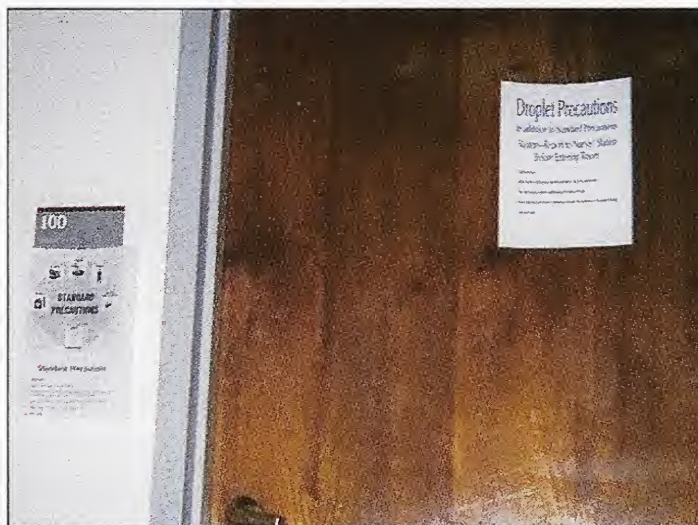


Figure 23 The isolation sign is posted on the door of the room giving instructions about the correct precautions to use.

reverse isolation: a method of protecting patients who have a weakened immune system from germs in the environment

Sometimes you will care for patients who are in **reverse isolation**. This type of isolation may also be called protective isolation. These patients do not have an infectious disease. Reverse isolation is used when patients have diseases or treatments that weaken the immune system. An example of one of these diseases is AIDS. When the immune system is weak, patients can contract infection easily because the body is unable to fight it off. These individuals can become ill from contact with microbes that the immune system of the average person resists. Some patients receive medical treatments, such as chemotherapy for cancer, that weaken the immune system. When patients have a weakened immune system for any reason, reverse isolation measures may be used to protect the patient from the environment.

TRANSMISSION-BASED PRECAUTIONS

transmission-based precautions: CDC recommendations for isolating patients known or suspected to have certain diseases to prevent the spread of infection

When researchers at the Centers for Disease Control developed the new standard precautions, they also reviewed and revised the system of isolation practices. Several existing isolation categories were eliminated. The new isolation categories are called **transmission-based precautions**. They are used for patients who are known or suspected to have highly transmissible pathogens for which standard precautions alone would not provide adequate protection. It is important to remember, however, that *standard precautions are always used in addition to other forms of isolation*. Some diseases are spread by more than one route and require more than one type of isolation. An example is chickenpox. This disease is spread by the airborne method and by contacting the drainage from lesions on the patient's skin. A patient with chickenpox will be in both airborne and contact precautions. An example of various diseases and recommended transmission-based precautions is found in Table 2. The nurse supervisor and physician are responsible for selecting the type of transmission-based precautions used. Some precautions are used for a short time. At other times precautions are used for the duration of the illness. The patient may be safely removed from isolation when he is no longer able to spread the disease causing pathogen to others. The length of time in isolation is determined by the type of disease, the treatment, and the patient's response. Remember, you cannot tell if the patient is contagious by appearance alone. The nurse and physician decide when it is safe to remove the patient from isolation.

AIRBORNE PRECAUTIONS

Airborne precautions are used with diseases such as tuberculosis (Figure 24). The causative agent for airborne diseases is very tiny and can spread for long distances in the air. These diseases are spread by inhaling the pathogen. Some of these diseases can also be spread by direct contact, but most cannot. Because of this, we

TABLE 2 Diseases Requiring Transmission-Based Isolation Precautions

| Disease or Condition | Type of Precautions |
|--|---|
| AIDS | Standard (or reverse if facility policy) |
| Chickenpox | Airborne and Contact |
| Diarrhea | Standard |
| Drug resistant skin infections | Contact |
| German measles | Droplet |
| Head or body lice | Contact |
| Hepatitis, type A..... | Standard. Use contact if diarrhea or incontinent patient. |
| Hepatitis, other types | Standard |
| HIV disease | Standard |
| Impetigo | Contact |
| Infected pressure sore with no drainage..... | Standard |
| Infected pressure sore with heavy drainage..... | Contact |
| Infectious diarrhea caused by a known pathogen | Contact |
| Measles | Airborne |
| Mumps..... | Droplet |
| Oral or genital herpes..... | Standard |
| Scabies..... | Contact |
| Syphilis | Standard |
| Tuberculosis of the lungs | Airborne |
| Widespread shingles..... | Airborne and Contact |
| Use standard precautions in addition to other types of precautions listed. | |

use respiratory protection. Personnel who have had measles and chickenpox are immune to these diseases. Respiratory protection is unnecessary in this case. Standard precautions are also used with airborne precautions.

Patients with diseases spread by the airborne method of transmission should be moved to a private room. The door to the room should be closed at all times. Special ventilation is required in this room. The air flow is reversed so that air from the room is drawn upward into the ventilation system. This creates a **negative pressure environment**. The room should have a specially filtered air exhaust system or one that is ventilated directly to the outside of the building. The airborne precautions room must have six to twelve complete changes of air each hour. This type of ventilation minimizes the escape of pathogens into the hallway. In a room with normal ventilation, the air is pushed downward. It is forced from the room into the hall.

negative pressure

environment: modification of the air circulation in a room so that the room air is drawn upward into the ventilation system

AIRBORNE PRECAUTIONS

(in addition to Standard Precautions)

VISITORS: Report to nurse before entering.



Patient Placement

Use **private room** that has:
Monitored negative air pressure,
6 to 12 air changes per hour,
Discharge of air outdoors or HEPA filtration if
recirculated.

Keep room door closed and patient in room.



Respiratory Protection

Wear an N95 respirator when entering the room of a patient with known or suspected infectious pulmonary **tuberculosis**.

Susceptible persons should not enter the room of patients known or suspected to have **measles** (rubeola) or **varicella** (chickenpox) if other immune caregivers are available. If susceptible persons must enter, they should wear an **N95 respirator**. (Respirator or surgical mask not required if immune to measles and varicella.)



Patient Transport

Limit transport of patient from room to essential purposes only. Use **surgical mask** on patient during transport.

Figure 24 When a patient is in airborne precautions, the door to the room is kept closed at all times. (Courtesy of BREVIS Corporation, Salt Lake City, UT)

high efficiency particulate air (HEPA) mask: a special face mask with very tiny pores that prevents transmission of airborne infections

When health care workers enter the room of a patient in airborne precautions, a special mask is worn. This mask is called a **high efficiency particulate air**, or **HEPA, mask**. These masks provide more protection than a regular surgical mask. The pathogens that cause airborne infections are very tiny and can fit through the pores of a surgical mask. The HEPA mask has smaller pores. Pathogens are not able to get through the pores of the HEPA mask. The HEPA mask is always secured with elastic straps that fit tightly around the head. The mask has two sets of straps.

There are special requirements for using a HEPA mask. It is available in several sizes. The mask must be the correct size to fit the face. It should fit tightly to be sure that there are no air leaks around the mask. Men with facial hair cannot wear the HEPA mask because the hair prevents a tight seal. A hood is available instead of the mask for men with facial hair. Not everyone can safely wear a HEPA mask. Some facilities designate only certain personnel use HEPA masks and work in airborne isolation rooms. To be qualified to use a HEPA mask, the health care worker must be fit tested by a qualified professional. The worker must then be examined by a physician to ensure that use of the mask will not cause the worker

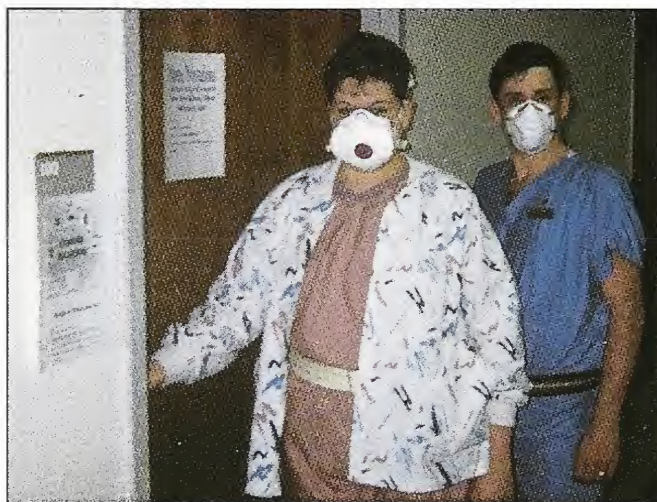


Figure 25 Different types of HEPA masks. These masks are held tightly in place by two elastic straps at the back of the head.

to have medical problems. Each time that the mask is applied, check the fit and test to be sure that there are no air leaks.

There are several different types of HEPA masks available (Figure 25). Some HEPA masks are disposable. They are designed to be used once and then thrown away. Other HEPA masks are reusable. Some HEPA masks have air filters in them that must be changed. Your instructor and supervisor will teach you about the HEPA masks used in your health care facility.

There are several masks that may be used in place of the HEPA mask when caring for patients in airborne precautions. Health care workers may prefer these masks because they are lighter in weight and more comfortable to wear than the HEPA mask. The **PFR95 respirator** filter, Figure 26, and the **N95 respirator** both meet the CDC guidelines for providing protection against the tiny airborne pathogens. These masks are also available in different sizes. Like the HEPA mask, they must be fit tested by a qualified professional before use. The health care worker must check the mask each time it is worn to be sure that there are no air leaks.

PFR95 respirator: a special type of mask used when caring for a patient in airborne precautions

N95 respirator: a special mask used when caring for a patient in airborne precautions

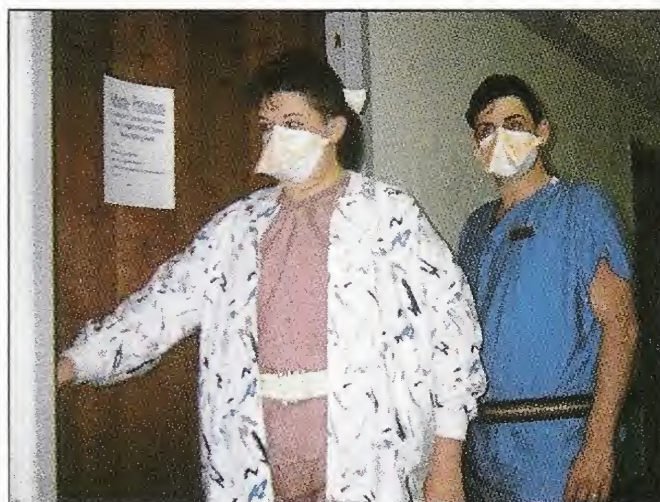


Figure 26 The PFR95 respirator can be used instead of a HEPA mask.

DROPLET PRECAUTIONS

Droplet precautions are used for patients who have diseases that are spread by mucus and other droplets from the respiratory tract (Figure 27). These droplets are large and heavy, and they are spread from the patient's nose and mouth. They usually stay within three feet of the patient. A regular surgical mask provides adequate protection for those who come within three feet of the patient. A surgical mask has larger pores than the HEPA mask. However, the pathogens that cause droplet infections are larger than the pores in the surgical mask, so they cannot pass through the mask. Surgical masks either tie in the back of the head or are secured with elastic straps that slip behind the head or over the ears. Wearing a gown is not necessary. Standard precautions are also used. A private room is used, but no special ventilation is necessary, and the door does not have to remain closed.

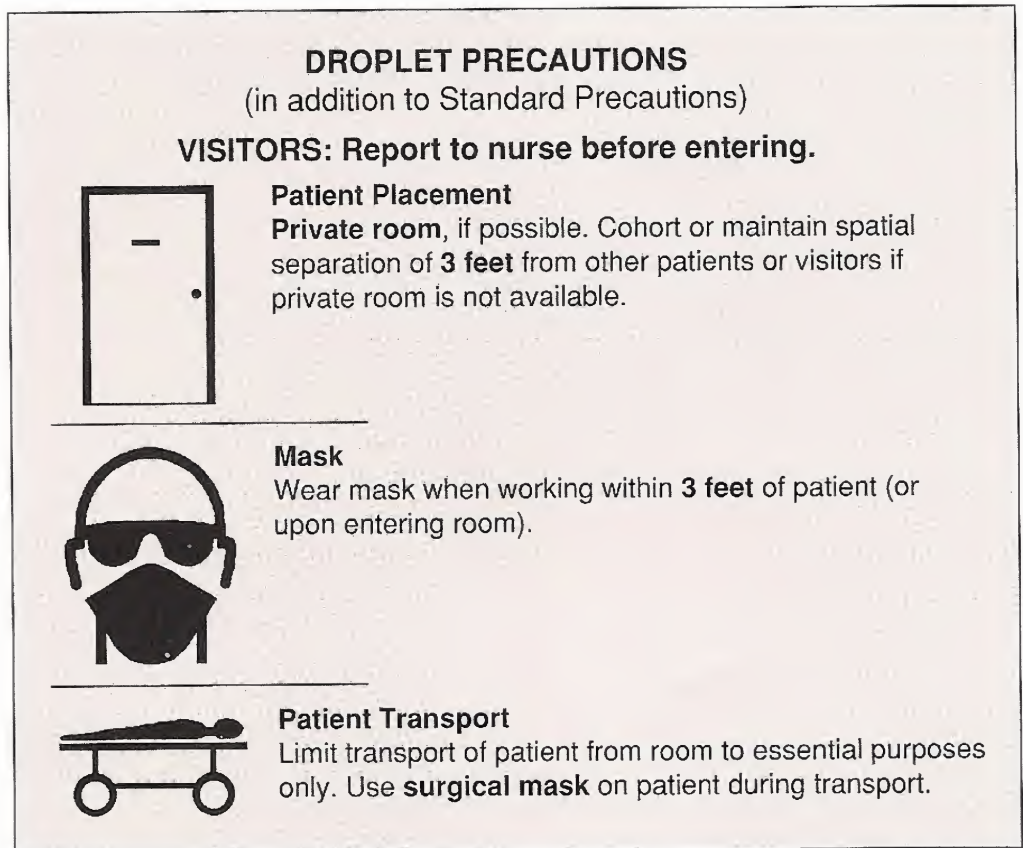


Figure 27 Droplet precautions. (Courtesy of BREVIS Corporation, Salt Lake City, UT)

CONTACT PRECAUTIONS

Contact precautions are used for patients who have known infections that are spread on the skin, urine, or other secretions that drain to the outside of the body (Figure 28). Contact precautions protect the nursing assistant from pathogens spread by direct contact with the patient. They also protect against indirect contact

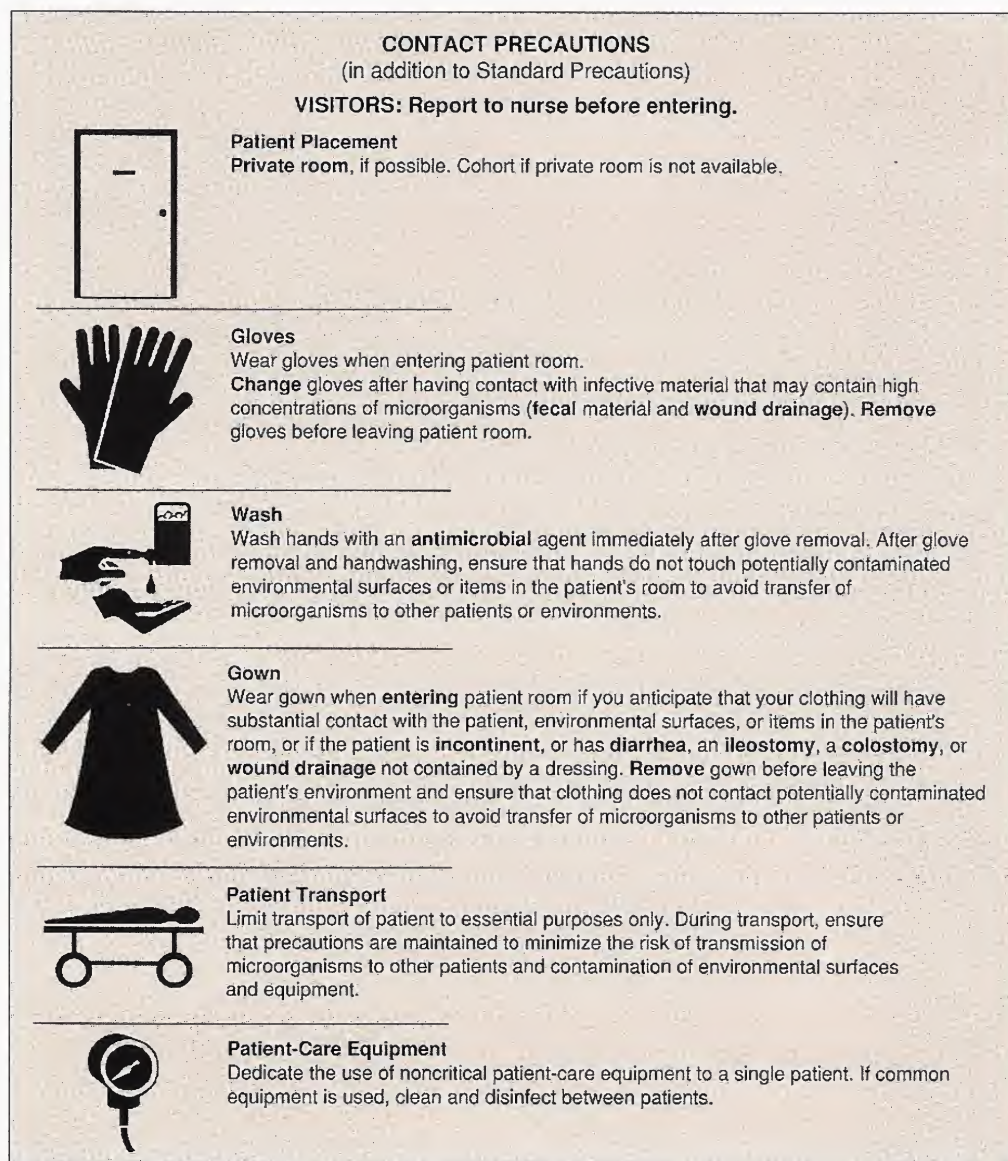


Figure 28 Contact precautions. (Courtesy of BREVIS Corporation, Salt Lake City, UT)

with pathogens that have been transferred from the patient to environmental surfaces or equipment.

Contact precautions involve the use of both gloves and gowns. In addition to the situations in which you wear and change gloves for standard precautions, gloves are worn when you enter the patient's room. Change the gloves if they contact infective material, such as wound drainage. Wash your hands and apply a clean pair of gloves before continuing. Remove the gloves and wash your hands immediately before leaving the patient's room. You may need to use a clean paper towel under your hand to open the door of the room. Do not touch the patient or other environmental surfaces after removing your gloves. After the door is opened, discard the paper towel in the waste container inside the room.

A gown is worn when caring for a patient in contact precautions if your clothing may have substantial contact with the patient, environmental surfaces, or items in the room. A gown should also

be worn if the patient is incontinent or has a wound that is draining heavily onto the linen. An example of when you would wear gloves but not a gown would be when you are entering a room to deliver a meal tray to a patient in isolation who feeds himself. However, if you were going to bathe the patient and change the linen on the bed, both gown and gloves should be worn.

If you will be using your watch to take a pulse in the isolation room, remove the watch from your wrist before entering the room. Place it on a clean paper towel. Carry the towel into the room. When you are ready to leave the room, pick up the watch after removing your gloves and gown and washing your hands. The top side of the paper towel your watch is on is considered clean. The bottom side is contaminated. Pick up the paper towel by holding the clean top side, and discard it into the trash.

SUPPLIES AND EQUIPMENT USED IN ISOLATION ROOMS

Each facility has policies and procedures for cleaning, storing, and disinfecting patient care items used in isolation rooms. Permanent equipment, such as thermometers and blood pressure cuffs may be left in the room. Disposable equipment that is used once and discarded may also be used. When permanent equipment must be removed from the room, it should be placed in a closed plastic bag. It is then removed to an area where it can be cleaned and disinfected according to facility policy. Linen and trash are also placed in sealed plastic bags when they are removed. One bag can safely be used unless the outside of the bag becomes contaminated during the bagging process. If this occurs, the first bag should be placed inside a clean, outer bag. Know and follow facility policies for removing, transporting, and cleaning items removed from the isolation room.

Serving Food Trays to a Patient in Isolation

Special dishes are usually not necessary when serving food to a patient in isolation. After the patient has finished eating, any left-over food is discarded into the isolation trash can in the room. Follow your facility policy for removing the food tray. Some facilities remove the food tray in a plastic bag or other container. Some facilities use disposable dishes that are discarded in the isolation trash.

Transporting the Patient Out of the Isolation Room

When caring for patients in isolation, the movement of the patient from one area of the facility to another should be avoided whenever possible. There are times, however, when the patient must be taken from the room and transported to another area. Follow facility policies and procedures instructing you how to do this. Notify the unit to which the patient is being transported. It should be prepared to care for the patient immediately. The patient should

wear a surgical mask during transport if he is in airborne or droplet precautions. For a patient in contact precautions, the draining area should be well covered so that infectious body fluid does not touch other people, environmental surfaces, or equipment. A clean sheet should be used to cover the seat and back of the wheelchair used to transport the patient. You may drape the sheet around the patient's body so that it does not drag on the floor. The patient should be returned to the isolation room as soon as possible.

Key Points

- The Centers for Disease Control and Prevention is a government agency that studies infections and makes recommendations to prevent their spread.
- Universal precautions were developed in 1985 in response to the AIDS epidemic. They provide protection for many infections, including AIDS and hepatitis B.
- Body substance isolation is another system of protection that is similar to universal precautions but requires the use of gloves for all body fluids.
- Standard precautions were first published in 1996 and offer a wider range of protection than universal precautions or body substance isolation. The precautions are used any time that contact with blood, moist body fluid (except sweat), secretions, excretions, mucous membranes, or non-intact skin is expected.
- There are six elements in the chain of infection. All six elements must be present for an infection to develop.
- Disease causing microbes can be spread in the air, by direct or indirect contact, common vehicle, and by vector.
- Handwashing is the most important measure that health care workers can use to prevent the spread of infection.
- Personal protective equipment provides a barrier between the health care worker and source of infection.
- The nursing assistant and other health care workers must select the correct personal protective equipment to use for the task being performed.
- Hands must be washed before gloves are put on and after they are removed. The use of gloves does not replace the need for handwashing.
- Changing your gloves and washing your hands may be necessary several times during the care of one patient.
- A face mask can be worn without eye protection, but eye protection is never worn without a face mask.
- Most patients with known infections are placed in a private room. Two patients with the same infection may share a room.
- The three types of transmission-based precautions are airborne, droplet, and contact.
- Standard precautions are always used in addition to transmission-based precautions.
- A HEPA mask is a special mask worn when caring for patients in airborne precautions. It requires special fit testing and must be checked for a tight seal each time it is worn.
- A PFR95 mask or N95 respirator can also be worn when caring for patients in airborne precautions. The mask must be checked for a tight seal each time it is worn.
- Secretions containing infectious droplets are usually not spread more than three feet away from the source patient. A surgical mask offers adequate protection when caring for patients in droplet precautions.
- Gloves are always worn when entering the room of a patient in contact precautions. A gown is worn when substantial contact with the patient or the environment is expected.

REVIEW QUIZ

1. The Centers for Disease Control and Prevention is:
 - a. an agency that regularly inspects health care facilities.
 - b. a government agency that studies infections and makes recommendations to prevent their spread.
 - c. an organization that is mandated to protect health care workers.
 - d. a division of your state department of health.
2. When considering infectious diseases, which of these poses the greatest threat for health care workers at work?
 - a. AIDS
 - b. HIV disease
 - c. Hepatitis B
 - d. None of the above
3. Standard precautions are:
 - a. a set of recommendations to prevent infection in health care workers and others.
 - b. the same as universal precautions.
 - c. the same as body substance isolation.
 - d. none of the above.
4. Which of the following elements must be present for an infection to spread?
 - a. The chain of disease
 - b. A portal of entry and portal of exit
 - c. Immunity
 - d. All of the above
5. The causative agent is the:
 - a. source of infection.
 - b. person who has an infection.
 - c. susceptible host.
 - d. pathogen that causes disease.
6. The following is true about the airborne method of transmission.
 - a. The microbe that causes the infection is small.
 - b. The microbe that causes the infection is very lightweight.
 - c. The microbe that causes the infection can travel for long distances in the air.
 - d. All of the above.
7. The following is true about the droplet method of transmission.
 - a. The microbe that causes the infection is spread on respiratory secretions.
 - b. The microbe that causes the infection is very lightweight.
 - c. The microbe that causes the infection can travel for long distances in the air.
 - d. All of the above.
8. Infections that are spread by direct contact are transmitted by:
 - a. touching an environmental surface that has a pathogen on it.
 - b. vectors.
 - c. touching the source of the infection.
 - d. common vehicles of transmission.
9. Infections that are spread by indirect contact are spread by:
 - a. touching an environmental surface that has the pathogen on it.
 - b. mice and rats.
 - c. touching the source of infection.
 - d. none of the above.
10. Excretions are:
 - a. substances that drain from infected wounds.
 - b. waste products from the body.
 - c. saliva and sweat.
 - d. all of the above.
11. The most important thing that the nursing assistant can do to prevent the spread of infection is:
 - a. wear gloves for all patient contact.
 - b. wear gloves for contact with blood or body fluid.
 - c. handwashing.
 - d. take a shower every day.
12. For gloves to provide effective protection against the spread of infection, they must:
 - a. fit your hands.
 - b. not have tears in them.
 - c. be used for one patient only.
 - d. all of the above.
13. Personal protective equipment may also be called:
 - a. universal equipment.
 - b. body substance precautions.
 - c. barrier equipment.
 - d. standard equipment.
14. Standard precautions are used for contact with:
 - a. blood and any moist body fluid, except sweat.
 - b. mucous membranes.
 - c. non-intact skin.
 - d. all of the above.

15. You are not sure if a bedpan you were assigned to clean is contaminated with body fluids. It looks as if it has not been used. You should:
 - a. wear personal protective equipment.
 - b. take no special precautions.
 - c. ask the nurse if the bedpan has been used.
 - d. none of the above.
16. Gloves are worn to prevent the:
 - a. nursing assistant from picking up a pathogen from a patient.
 - b. patient from picking up a pathogen from the nursing assistant.
 - c. nursing assistant from picking up a pathogen on one patient and spreading it to another patient.
 - d. all of the above.
17. The following statement is true about the use of gloves.
 - a. Gloves should be used for all routine patient care.
 - b. The use of gloves does not replace the need for handwashing.
 - c. Gloves are always worn when a patient is in droplet precautions.
 - d. Gloves are expensive and their use is restricted only to sterile procedures.
18. Gloves should be removed and your hands washed:
 - a. if one or both gloves accidentally tear.
 - b. if the gloves become visibly contaminated with excretions.
 - c. after each patient contact before caring for the next patient.
 - d. all of the above.
19. Gloves should be worn when the nursing assistant performs the following procedure(s):
 - a. washing the intact skin of a patient's arms and legs
 - b. serving a meal tray to a patient who feeds herself
 - c. washing the patient's genital area
 - d. all of the above
20. The following is true about the use of goggles, face shields, and masks.
 - a. A mask can be worn without a face shield, but a face shield should never be worn without a mask.
 - b. The goggles and face shield are always worn together.
 - c. Goggles can be worn without a mask.
 - d. None of the above.
21. The following is true about wearing a gown to protect yourself from splashing secretions.
 - a. A regular patient gown may be used.
 - b. The gown must be made of plastic to keep the secretions from soaking through it.
 - c. The gown must be fluid resistant.
 - d. The gown may be worn for the rest of your shift to keep you warm.
22. The following is true about handling used needles and razors.
 - a. The cap is always put back on the needle after use.
 - b. You do not have to use standard precautions when shaving a patient with a dull disposable razor.
 - c. Needlestick injuries are of no concern to the nursing assistant because he does not give the patient injections.
 - d. Used needles and disposable razors are discarded in a puncture resistant sharps container.
23. Your unit has two patients of the same sex with a diagnosis of tuberculosis. Which of the following is correct?
 - a. Each patient must be in a private room.
 - b. Both patients may share a room.
 - c. The patients will be placed in contact precautions.
 - d. No special isolation measures are needed.
24. When caring for a patient in airborne precautions, the nursing assistant must wear a:
 - a. surgical mask.
 - b. full face shield.
 - c. HEPA, N95, or PFR95 mask.
 - d. none of the above.
25. You know that a patient in contact precautions has an infection that is spread in the:
 - a. air.
 - b. patient's respiratory secretions.
 - c. secretions or excretions that drain on the outside of the patient's body.
 - d. sweat.
26. When changing the bed linen of a patient in contact precautions, you should wear a:
 - a. gown and gloves.
 - b. gown, gloves, mask, and goggles.
 - c. mask and goggles.
 - d. mask, gloves, and gown.

27. When caring for a patient in droplet precautions, you should wear a:
- HEPA mask.
 - surgical mask.
 - PFR95 mask.
 - face shield.
28. The following is true about the use of standard precautions when a patient is in airborne, droplet, or contact isolation:
- Standard precautions are used in addition to the other precautions.
 - Use of standard precautions is not necessary if another type of precaution is used.
 - Use of standard precautions in this situation is optional.
 - None of the above.
29. The following is true about transporting a patient in airborne precautions to another unit of the health care facility:
- The nursing assistant should wear a PFR95 mask in the hallway.
 - The patient should wear a HEPA mask in the hallway.
 - The patient should wear a surgical mask in the hallway.
 - Wearing a mask is not necessary.
30. The following is true about removing linen from the room of a patient in contact precautions:
- The linen is always double bagged.
 - The linen is not removed from the room until the contact precautions are discontinued.
 - No special linen handling is necessary.
 - The linen is removed in a single plastic bag unless the outside of the bag is contaminated during the bagging process.

Answers to Review Quiz

- | | | |
|-------|-------|-------|
| 1. b | 11. c | 21. c |
| 2. c | 12. d | 22. d |
| 3. a | 13. c | 23. b |
| 4. b | 14. d | 24. c |
| 5. d | 15. a | 25. c |
| 6. d | 16. d | 26. a |
| 7. a | 17. b | 27. b |
| 8. c | 18. d | 28. a |
| 9. a | 19. c | 29. c |
| 10. b | 20. a | 30. d |

INFECTION CONTROL UPDATE, 1996

BARBARA ACELLO, RN

In 1996, the Centers for Disease Control and Prevention (CDC) revised the system of isolation precautions. The new Standard Precautions and the Transmission-Based Precautions have an impact on all nursing assisting textbooks. The information in this 32-page booklet describes how the changes in infection control evolved, how they are used, and how they affect nursing assistant practices. This update can be used in conjunction with all Delmar nursing assistant textbooks, including:

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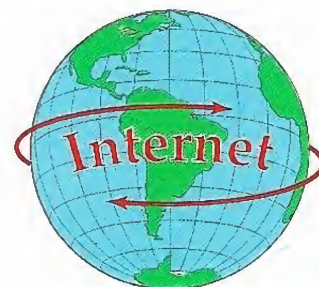
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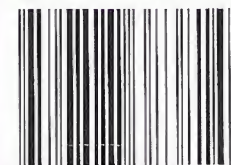
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